NORTEL NETWORKS

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96-86

March 31, 1999

Ms. Magalie Roman Salas
Secretary
Federal Communications Commission
445 Twelfth Street, S.W.
Washington, DC 20544

EX PARTE NOTICE

RE: ***Ex Parte Communication*** In the Matter of the Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Agency Communications Requirements through the Year 2010; Establishment of Rules and Requirements for Priority Access Service, WT Docket No. 96-86.

Dear Ms. Salas:

Pursuant to Section 1.1206 of the Commission's rules, enclosed please find two copies of a written *ex parte* presentation in the referenced proceeding. If you have any questions, please communicate with the undersigned.

Sincerely,

Raymond L. Strassburger
Director, Government Relations-Telecommunications Policy

RLS/kc

Enclosures

cc: D'wana Terry, Chief, Office of Public and Private Wireless Division, WTB
John Clark, Office of Public and Private Wireless Division, WTB
Peter Daronoc, Office of Public and Private Wireless Division, WTB
Ramona Melson, Office of Public and Private Wireless Division, WTB

EX PARTE OR LATE FILED

Before the
Federal Communications Commission
Washington, D. C. 20554

In the Matter of:

The Development of Operational,	)	
Technical and Spectrum Requirements	)	
For Meeting Federal, State and Local	)	**Ex Parte File**
Public Safety Agency Communications	)	WT Docket No. 96-86
Requirements through the Year 2010	)	
	)	
Establishment of Rules and Requirements	)	
For Priority Access service	)	

Ex Parte Comments of Northern Telecom Inc.

Northern Telecom Inc. ("Nortel Networks") supports the Commissions' stated goals of increased competition, better technologies interoperability and increased efficiency. These ex parte comments reflect Nortel Networks' vision of Commission actions that further those goals.

Nortel Networks urges the FCC to keep equipment marketplace factors in mind as it develops and finally adopts rules in this proceeding. Nortel Networks agrees with Ericsson that the annual market size of the public safety marketplace is not large enough to support full scale development of new products by multiple vendors. The attractiveness of the marketplace is further compromised by the limitations on the use of the new spectrum resulting from occupancy by broadcasters and the uncertain date for abandonment. To achieve a competitive marketplace with a broad selection of products, features and technologies, the FCC should adopt rules flexible enough to allow the adaptation of existing technology, such as TDMA, GSM, and Project 25 (Phase I), etc., and future innovations of existing technology, such as EDGE into the new 700

MHz band.[1] The adaptation of existing infrastructure into this new band will bring the benefit of inherent reliability and should lead to lower costs for the public safety community.

ACCP Proposals

Motorola encourages the Commission to evaluate the Adjacent Channel Coupled Power (ACCP) issues raised by it and Ericsson.[2] Nortel Networks agrees with Motorola's suggestion that development of ACCP levels is an activity best achieved in a standards setting body such as the Telecommunications Industry Association (TIA) rather than a regulatory body such as the Commission.[3] The Commission and industry both benefit from assignment to TIA - development and maintenance of the ACCP tables by the appropriate TIA subcommittee will reduce the demand for FCC administrative resources, while facilitating maintenance, changes, and additions to the ACCP tables as needed by changes in the industry. Nortel Networks recommends that ACCP tables, as the appropriate TIA committees develop them, be used to facilitate the measurement process of ACCP.

Nortel Networks also agrees that development of the ACCP tables should be accomplished quickly. Based upon prior experiences in standards setting forums, though, Nortel Networks believes that the development and validation of the appropriate tables, plus acceptance of the tables by all interested parties by June 15th of 1999 as suggested by Motorola, is

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[1] EDGE is a new digital data technology now being standardized in Telecommunications Industry Association subcommittee TR 45.3.

[2] *Comments of Motorola to Petitions for Reconsideration,* WT Docket No. 96-86, filed February 5, 1999 (Motorola Comments) at 5, 6. See also *Petition for Reconsideration of Ericsson Inc. to the First Report and Order,* WT Docket No. 96-86, filed December 2, 1998. (Ericsson Petition) at 10, 11. See also Nortel ex parte comments dated July 10, 1998 evaluating Motorola proposed ACCP values.

[3] Motorola Comments at 6.

optimistic.[4] To ensure that manufacturers of potential equipment for the new 700 MHz public safety band have a defined path to follow prior to expected standards adoption of ACCP tables, Nortel Networks recommends that existing FCC spectrum masks as defined in 47 CFR 90.210 be considered the de facto standard for the new 700 MHz band. Nortel Networks recommends that the Commission establish a time limit for the standards process to reach conclusion. Until such time as the necessary standards are available, the current spectrum masks set out in part 90.210 should remain in effect.

Nortel Networks agrees with Ericsson that combining wideband channels to at least 200 KHz should be allowed.[5] Nortel Networks, though, believes that adoption of the ACCP proposals of Ericsson for 200 KHz channels run counter to the Commission stated objectives of lower cost and newer technologies for public safety agencies.[6] As demonstrated in Exhibit A, strict adherence to the Ericsson measurements would perhaps limit the use of GSM and the GSM/TDMA technology convergence, EDGE, in the new spectrum. A 200 KHz channel width with revised ACCP values allows implementation of the new EDGE capability. EDGE will provide high speed data which in turn should provide great benefit and choice to the public safety sector. Because EDGE will have commercial applications, this technology will have a lower price for public safety than a technology uniquely developed for this spectrum.

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[4] Id.

[5] Ericsson Petition at 7. See also Motorola Comments at 8 where Motorola notes the benefits of greater channel aggregation.

[6] Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Agency Communications Requirements Through the Year 2010; Establishment of Rules and Requirements of Priority Access Service, WT Docket No. 96-86 , *Second Notice of Proposed Rulemaking,* 12 FCC Rcd at 17,763. .

Talk Around

The potential disruption of Global Navigation Satellite Systems (GNSS) as pointed out by the Federal Law Enforcement Wireless Users Group (FLEWUG) is a serious concern. Nortel Networks agrees that the GNSS must continue to provide the existing services after operations commence in the new public safety spectrum. Nevertheless, the FLEWUG proposal that would reverse the traditional base and mobile allocations has substantial drawbacks as noted by Motorola and Ericsson.[7] Nortel Networks agrees with the Motorola's comments that the FLEW UG proposal that essentially reverses the traditional base and mobile allocations in the 794-806 MHz band from those used in other bands has the undesirable result of prohibiting *"talk around"* modes of mobile-to-mobile direct mode communication.[8] Further, the FLEWUG proposal would most likely substantially increase the price of equipment because of necessary redesign.

Spectral Efficiency

Nortel Networks agrees with Ericsson that the specified data efficiency of 384 kbps/150 KHz be reduced to 384 kbps/200 KHz of bandwidth (1.92 kbps).[9] Nortel Networks agrees with Ericsson that the FCC authorize combining more than four narrowband channels.[10] As noted, aggregation of only four channels could limit the availability of evolving technologies, such as

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[7] Motorola Comments and *Opposition by Ericsson Inc. to the Petitions for Reconsideration to the First Report and Order filed by Union Pacific Railroad Company; Daniels Electronics Ltd.; APCO (Associated Public Safety Communications Officers) Canada; New York State Technology Enterprise Corporation; The State of California; The Project 25 Steering Committee; Motorola, Inc.; Association of Public-Safety Communications Officials-International, Inc. (APCO); and the Federal Law Enforcement Wireless Users Group (FLEWUG),* WT Docket No. 96-86, filed February 5, 1999 (Ericsson Opposition) at 8.

[8] Motorola Comments at 4, 5

improved IS-136 technology system implementations, which would require 31.25 KHz aggregation or 5 channels. The improved IS-136 implementations would meet the proposed 4.8 kbps/6.25 KHz efficiency standards.

APC

As noted by Motorola, Ericsson's automatic power control (APC) proposal could frustrate communications among mobile units. Coverage may not be provided to all mobile units.[11] Nortel Networks agrees with Motorola that APC should be a voluntary option of the base station transceiver (BTS) infrastructure.

Respectfully Submitted,

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March 25, 1999

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9 Ericsson Petition at 9.
10 Ericsson Petition at 7.
11 Motorola Comments at 7.

Exhibit A

Comparison of Relative ACCP Specifications

1. Ericsson Petition [1]

The following two tables reflect the recommendation by Ericsson in the "Petition for Reconsideration of Ericsson Inc. to the First Report and Order, December 2, 1998" document. It uses the odd 80 kHz measurement bandwidth for some of the mask specification.

200 kHz Mobile Transmitter ACCP Requirements

Offset from Center Frequency (kHz)	Measurement Bandwidth (kHz)	Maximum ACCP Relative (dBc)	Maximum ACCP Absolute (dBm)
150	80.0	-25	Not specified
250	80.0	-50	-35
350	80.0	-50	-35
600 to 1000	30(s)	-60	-45
1000 to receive band	30(s)	-70	-55
In the receive band	30(s)	-100	-75

200 kHz Base Transmitter ACCP Requirements

Offset from Center Frequency (kHz)	Measurement Bandwidth (kHz)	Maximum ACCP Relative (dBc)
150	80.0	-25
250	80.0	-50
350	80.0	-50
600 to 1000	30(s)	-60
1000 to receive band	30(s)	-70
In the receive band	30(s)	-100

2. GSM Standard [2]

The following four tables reflect the masks specified for GSM in the " Radio transmission and reception (GSM 05.05)" document. All the measurement bandwidth here is 30 kHz. It has a different relative ACCP (dBc) requirement for offsets beyond 600 kHz, so that a constant absolute ACCP requirement is imposed.

GSM 900 MS:

	100	200	250	400	≥ 600 <1800	≥ 1800 <3000	≥ 3000 <6000	≥ 6000
≥ 39	+0.5	-30	-33	-60	-66	-69	-71	-77
37	+0.5	-30	-33	-60	-64	-67	-69	-75
35	+0.5	-30	-33	-60	-62	-65	-67	-73
≤ 33	+0.5	-30	-33	-60	-60	-63	-65	-71

GSM 900 normal BTS:

	100	200	250	400	≥ 600 <1800	≥ 1800 <3000	≥ 3000 <6000	≥ 6000
≥ 43	+0.5	-30	-33	-60	-70	-73	-75	-80
41	+0.5	-30	-33	-60	-68	-71	-73	-80
39	+0.5	-30	-33	-60	-66	-69	-71	-80
37	+0.5	-30	-33	-60	-64	-67	-69	-80
35	+0.5	-30	-33	-60	-62	-65	-67	-80
≤ 33	+0.5	-30	-33	-60	-60	-63	-65	-80

DCS 1800 MS:

	100	200	250	400	≥ 600 <1800	≥ 1800 <6000	≥ 6000
≥ 36	+0.5	-30	-33	-60	-60	-71	-79
34	+0.5	-30	-33	-60	-60	-69	-77
32	+0.5	-30	-33	-60	-60	-67	-75
30	+0.5	-30	-33	-60	-60	-65	-73
28	+0.5	-30	-33	-60	-60	-63	-71
26	+0.5	-30	-33	-60	-60	-61	-69
≤ 24	+0.5	-30	-33	-60	-60	-59	-67

DCS 1800 normal BTS:

	100	200	250	400	≥ 600 <1800	≥ 1800 <3000	≥ 3000 <6000	≥ 6000
≥ 43	+0.5	-30	-33	-60	-70	-73	-75	-80
41	+0.5	-30	-33	-60	-68	-71	-73	-80
39	+0.5	-30	-33	-60	-66	-69	-71	-80
37	+0.5	-30	-33	-60	-64	-67	-69	-80
35	+0.5	-30	-33	-60	-62	-65	-67	-80
≤ 33	+0.5	-30	-33	-60	-60	-63	-65	-80

3. EDGE [3]

This last table reflect the masks specified for EDGE in the "Proposed UWC-136 RTT updates, (TR45/98.03.03.19R6)" document. It specified adjacent and alternate channel requirements in relative ACCP (dBc) and out of band emissions in absolute ACCP (dBm) requirement.

200 kHz Mobile and Base Transmitter ACCP Requirements

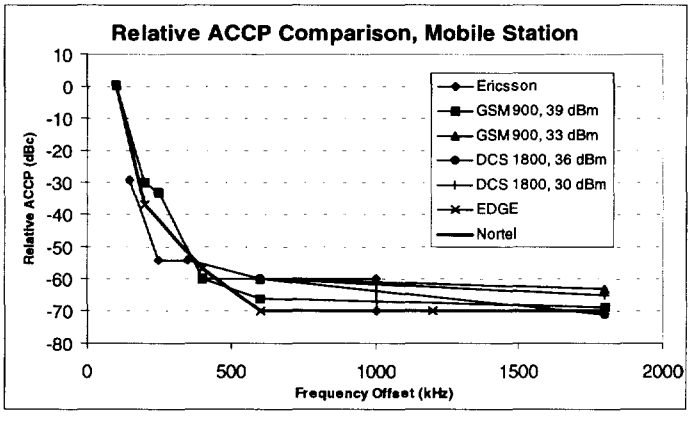
Offset from Center Frequency (kHz)	Measurement Bandwidth (kHz)	Maximum ACCP Relative (dBc)	Maximum ACCP Absolute (dBm)
200	30	-37	Not specified
400	30	-57	Not specified
600 to 1200	30	-70	Not specified
3000 to 6000	30(s)	Not specified	-36
≥ 6000	100 (s)	Not specified	-36

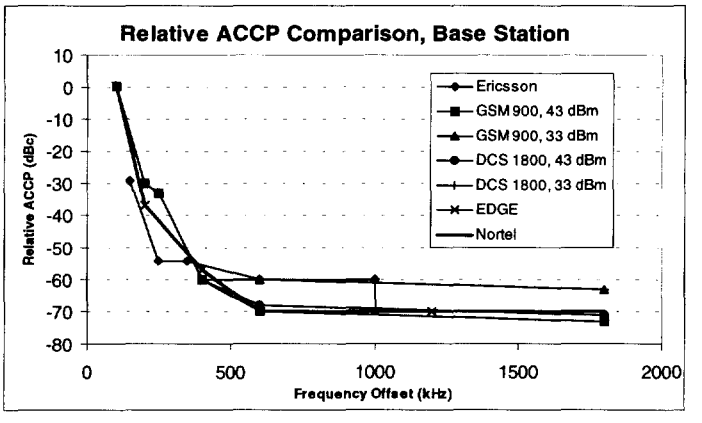
I. Comparison and Proposal

The following two charts shows the difference of relative ACCP specifications between the Ericsson petition, GSM 900, DCS 1800, and EDGE. Adjustments to the Ericsson ACCP numbers were made to account for the difference in measurement bandwidth (80 vs. 30 kHz). As we can see, the Ericsson proposal is too stringent because it would have failed both GSM/DCS for offset up to 400 kHz. Nortel Networks feels that as a new standard which both GSM and TDMA-136 is converging toward, EDGE should be accommodated to take advantage of the spectrum efficiency, power amplifier considerations that has already been done in choosing this mask. In the following table, Nortel Networks is proposing an ACCP mask which essentially aligns with the EDGE mask.

200 kHz Mobile and Base Transmitter ACCP Requirements

Offset from Center Frequency (kHz)	Measurement Bandwidth (kHz)	Maximum ACCP Relative (dBc)	Maximum ACCP Absolute (dBm)
100	30	+0.5	Not specified
200	30	-37	Not specified
400	30	-57	-20
600 to 1800	30	-70	-30
3000 to 6000	30(s)	-75	-36
≥ 6000	100 (s)	-80	-36





References:

1. Petition for Reconsideration of Ericsson Inc. to the First Report and Order, December 2, 1998
2. Digital cellular telecommunications system (Phase 2+); Radio transmission and reception (GSM 05.05 version 6.3.0 Release 1997)
3. Proposed UWC-136 RTT updates, (TR45/98.03.03.19R6)